

Application No. 10/064,757
Attorney Docket No. 125691-3 (13591US03)

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS

1. (Currently Amended) A method for obtaining cine angiography images in a computed tomography (CT) scanner, said method comprising:

positioning a patient at a first position in a CT scanner;

selecting independently configurable first and second triggering sequences, said triggering sequences each capable of associating two or more events, said events each capable of being independently configurable with respect to said patient;

scanning the patient during a first sweep beginning at a said first triggering event sequence;

moving the patient to a second position; and

scanning the patient in a second sweep beginning at a said second triggering event sequence;

forming a series of motion images based on at least said first sweep and said second sweep.

2. (Original) The method of claim 1 further comprising stopping said scanning after said first sweep.

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3. (Original) The method of claim 1, further comprising displaying said series of motion images.

4. (Currently Amended) The method of claim 1, wherein at least one of said ~~first triggering event and said second triggering event~~ events based on an occurrence within a cardiac cycle constitute ~~a predetermined~~ an independently configurable percent completion of a cardiac R-wave.

5. (Currently Amended) The method of claim 1, wherein at least one of said first triggering event events occurs ~~a predetermined~~ an independently configurable time period after a reference point in time.

6. (Currently Amended) The method of claim 1, wherein said second triggering ~~event sequence~~ occurs ~~a predetermined~~ an independently configurable time period after said first triggering ~~event sequence~~.

7. (Currently Amended) The method of claim 1, wherein at least one of said ~~first triggering event and said second triggering event~~ events constitute a predetermined percentage of an interval between R-waves.

8. (Currently Amended) The method of claim 1, wherein at least one of said first triggering ~~event sequence~~ and said second triggering ~~event sequence~~ constitute a prospective triggering ~~event sequence~~.

9. (Currently Amended) The method of claim 1, wherein at least one of said ~~first triggering event and said second triggering event~~ events occurs at 40% completion of an interval between cardiac R-waves.

10. (Currently Amended) The method of claim 1, wherein at least one of said ~~first triggering event and said second triggering event~~ events occurs at 80% completion of an interval between cardiac R-waves.

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11. (Original) The method of claim 1, wherein said series of motion images is formed from image data obtained over successive heartbeats.

12. (Currently Amended) A system for obtaining cine angiography images in a computed tomography (CT) scanner, said system comprising:

an electron beam being initiated based on a trigger sequence, said electron beam sweeping a target ring to produce x-rays for irradiating a patient;

a beam control system for controlling said electron beam to sweep said target ring to irradiate said patient in at least two CT scans, said beam control system capable of generating said trigger sequence, said trigger sequence, said trigger sequence further comprising a plurality of independently configurable events;

a movable patient positioner for automatically positioning a patient between said target ring and a detector ring, said movable patient positioner moving said patient from a first position to a second position between or during said at least two CT scans;

a detector ring for detecting x-rays passing through said patient from said target ring; and

a data acquisition system for acquiring image data from said detector ring based on said x-rays during said at least two CT scans, said data acquisition system forming a series of motion images based on said image data.

13. (Original) The system of claim 12, further comprising a display for displaying said series of motion images.

14. (Original) The system of claim 12, further comprising multiple target rings.

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15. (Original) The system of claim 12, further comprising multiple detector rings.

16. (Original) The system of claim 12, wherein said patient positioner moves between sweeps of said electron beam.

17. (Original) The system of claim 12, further comprising an image reconstruction module for processing said image data to form said series of motion images based on said image data.

18. (Original) The system of claim 12, further comprising an ECG digitizer for generating said trigger based on a patient's cardiac cycle.

19. (Currently Amended) A method for generating a cine sequence of images depicting cardiac activity, said method comprising:

sweeping an energy beam over a target to generate radiation to irradiate a patient;

moving the patient as the energy beam sweeps over the target to generate radiation, said radiation irradiating a plurality of portions of the patient's heart as the patient is moved;

coordinating said sweeping an energy beam and said moving the patient with at least two independently configurable trigger sequences:

detecting radiation attenuated by the patient;

converting the detected radiation to data signals, said data signals including cardiac information indicative of the patient;

generating a cine sequence of images using the data signals, said images depicting cardiac activity of the patient.

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20. (Original) The method of claim 19, further comprising displaying said cine sequence of images.

21. (Original) The method of claim 19, wherein the patient moves at a rate of three millimeters per second.

22. (Cancelled)

23. (Currently Amended) The method of claim 22 19, wherein said ~~triggering~~ coordinating comprises triggering the energy beam at a predetermined point in a cardiac R-wave.

24. (Currently Amended) The method of claim 22 19, wherein said ~~triggering~~ coordinating comprises triggering the energy beam after a predetermined time period after a reference point in time.

25. (Currently Amended) The method of claim 22 19, wherein said ~~triggering~~ coordinating comprises triggering the energy beam at a predetermined point in an interval between cardiac R-waves.

26. (Original) The method of claim 19, wherein said data signals are obtained over successive heartbeats.

27. (Currently Amended) A method for obtaining a cine sequence of cardiac images, said method comprising:

triggering an energy beam during an interval between first and second cardiac R-wave peaks in a first sweep over a target ring to generate radiation to irradiate a patient;

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collecting a first set of image data signals from radiation attenuated by the patient,
~~said first set of image data signals including cardiac information indicative of the patient;~~

moving the patient from a first position to a second position;

triggering the energy beam to perform a second sweep over the target ring;

collecting a second set of image data signals from radiation passing from the
target ring through the patient, ~~said second set of image data signals including cardiac
information indicative of the patient; and~~

associating additional cardiac information indicative of the patient with said first
and second sets of image data signals; and

generating a cine sequence of cardiac images from at least said first and second
sets of image data signals and associated additional cardiac information.

28. (Original) The method of claim 27, wherein said moving step further
comprises moving the patient from a first position to a second position after the first
sweep.

29. (Original) The method of claim 27, wherein said moving step further
comprises moving the patient from a first position to a second position during at least one
of said first sweep and said second sweep.

30. (New) The method of claim 1, wherein said independently configurable
event occurs at the injection of contrast media into said patient.

31. (New) The method of claim 30, wherein said contrast media is injected
intravenously into said patient.

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32. (New) The method of claim 30, wherein said contrast media is a bolus contrast injection.

33. (New) The method of claim 1, wherein said independently configurable event occurs at a manual trigger.

34. (New) The method of claim 1, wherein said independently configurable event occurs after said moving patient to a second position.

35. (New) The method of claim 1, wherein said independently configurable event occurs after skipping an independently configurable number of heartbeats.